

## OPPORTUNITIES

There is no terrestrial-based broadband option available to consumers, businesses, community anchor institutions, public safety agencies, schools, libraries, health care facilities and others in the Bristol Bay region of Alaska. Not only is satellite capacity limited but it is expensive and has quality of service issues with delay and latency. The project will provide customers affordable broadband access in the remote, unserved Bristol Bay region stretching from Dillingham to Kenai. It will also provide potential interconnection for other existing isolated terrestrial microwave networks such as Delta Net serving about 60 communities in the Yukon Kuskokwim region of Alaska. In the event that future marine fiber optic networks linking to Dillingham are developed this Bristol Bay microwave network will remain viable as an inter-village connection while providing aggregation and offering the opportunities that the Internet provides.

## PROPOSED FUNDED SERVICE AREAS

The project covers a very large geographic area and will provide direct broadband capacity into ■ small and typically extremely remote communities and tribal villages.

## NUMBER OF HOUSEHOLDS AND BUSINESSES PASSED

According to census data, the project will pass 1,823 households. We estimate that the project will pass ■ businesses and ■ community anchor institutions, public safety entities and critical community organizations. Among the specific public safety agencies that will be able to use the network are the Alaska State Troopers and the Dillingham City Police Department. Applicant operates the Village Public Safety Officer (VPSO) program, which has about ■ VPSO's serving in the villages. VPSO's are law enforcement officers stationed in the villages employed by BBNA, but report directly to Alaska State Troopers for law enforcement functions. The Federal Aviation Administration has a critical public safety need for reliable communications in the region.

## PROPOSED SERVICES AND APPLICATIONS FOR THE PROPOSED FUNDED SERVICE AREAS AND USERS

The primary services and applications for the proposed funded service area are related to making broadband available to customers. For the residential user, faster, more reliable and less expensive Internet will be the main product. Using this, customers will be to take full advantage of all the Internet can offer. For businesses and institutions, essentially the same product will be offered – faster, more reliable and less expensive Internet access, although these customers have direct use for the bandwidth to run their businesses more efficiently and utilize applications already available to them such as distance learning, telemedicine, and marketing to a worldwide customer base.

## NON-DISCRIMINATION AND INTERCONNECTION OBLIGATIONS

BBNA will offer access to any and all customers including individuals, businesses, internet service providers, other wholesale providers, wireless carriers, and anyone else who wishes to purchase broadband connectivity. We commit fully and enthusiastically to all of the requirements outlined in the NOFA related to non-discrimination and interconnection. We believe that the more people connected to the network, the more valuable it is for everyone.

## TYPE OF BROADBAND SYSTEM THAT WILL BE DEPLOYED (NETWORK TYPE AND TECHNOLOGY STANDARD)

The project uses technology and equipment that has been successfully deployed and delivers reliable service. A microwave solution is the only practical solution given the remote nature of the geography, the cost of a fiber optic alternative, and the performance and scalability issues with satellite. A detailed feasibility study was conducted by New Horizons Telecom, Inc. a major telecommunications design, construction, integration, and project management engineering firm concluding that —a modern, reliable (99.9999+%), wideband microwave system can be constructed. The full report is available for review and evaluation.

The proposed network is comprised of [REDACTED] different microwave paths for a total of [REDACTED] communications sites. The links are engineered to provide a combined two-way availability per link of at least 99.9999% or better resulting in less than 32 seconds of path outage per year per link. The locations of the sites have been selected to provide the maximum benefit of terrestrial broadband services to villages in the region.

The proposed network is planned in two phases. Phase 1 will be the backbone network which will consist of [REDACTED] sites previous mentioned. Initial bit rate for the backbone network will be [REDACTED]. As bandwidth demand increases, the backbone bit rate will be expanded to accommodate the increase. The proposed microwave system is located in the [REDACTED] band. Several manufacturers produce state-of-the-art reliable systems that operate in this band. Phase 2 of the project will construct spur microwave hops to the villages of [REDACTED]. These spur hops will be constructed with lower bit rate radios ranging in size from [REDACTED] rate.

The technology proposed for internet access into the villages of [REDACTED] is wireless. This equipment operates in the [REDACTED] band and has [REDACTED] of bandwidth. This equipment is widely deployed in over 20 states and as a wireless solution offers a quick-to-deploy broadband option, allowing services such as high-speed Internet access and support for bandwidth-intensive services such as video streaming which can leverage distance learning and telemedicine applications.

## QUALIFICATIONS

The management teams at Bristol Bay Native Association (BBNA) and its technical partner, Nushagak Electric and Telephone Cooperative (NETC) have clearly demonstrated the ability to successfully execute projects like the one outlined in this application. They have literally decades of experience in all the areas critical to this project's success – management, technical, financial, legal, and customer service.

BBNA has a partner in Nushagak Electric and Telephone Cooperative (NETC) and will initially contract with NETC to manage, operate and maintain the infrastructure in this proposal. NETC currently operates a microwave network similar to the one in this application between Manokotak, Clark's Point, and Dillingham. That network was installed by NETC technicians and ongoing maintenance is performed by the same crew. All operational support systems are in place to provide and support the services that will be offered. NETC has long-standing relationships with equipment vendors, construction contractors, and other professional

consultants to assist them as appropriate. New Horizons Telecom, Inc. a major telecommunications design, construction, and project management engineering firm with extensive project experience in remote Alaskan villages may be a major contractor in this project.

BBNA is almost exclusively grant-funded and currently administers about 50 grants or contracts with agencies in eleven different federal Departments, including the Departments of Commerce and Agriculture. BBNA clearly has the experience and understands the complexity of the compliance requirements associated with Federal grant funding. All of the current systems are in place and functioning effectively as evidenced by the – clean Independent Auditors Reports containing no issues of internal control, compliance requirements, findings or questioned costs. They have successfully managed federal (and state) grants for many years and understand the range of accountability, internal control and reporting requirements associated with federal funding. In addition to their administrative expertise, their day-to-day program management brings their staff in direct contact not only with residents but also with schools, tribal councils, health care providers and public safety officers. BBNA has strong relationships in all the communities with a wide range of constituencies that will directly benefit from the completion of this project.

#### OVERALL INFRASTRUCTURE COST OF THE BROADBAND SYSTEM

The total cost of the project is estimated at \$17,909,456.

#### OVERALL PROJECTED SUBSCRIBER PROJECTIONS

The subscriber projections were prepared under a variety of scenarios. The estimated number of household broadband subscribers is forecast to [REDACTED] at the end of 2013. This is based on a take rate gradually increasing over the period to [REDACTED]. Note that most of the households will typically be purchasing broadband from independent companies such as Internet service providers. The business and institutional penetration rate is based on the average user taking [REDACTED]. We have forecasted [REDACTED] users at this rate (including those aggregating bandwidth to provide household end users) [REDACTED]. Of course, the penetration rate would be higher if business/institutional users subscribe to a slower speed. The forecasted revenues would also be higher in this situation since the per megabit rate is higher on the slower speeds.

#### NUMBER OF JOBS ESTIMATED TO BE CREATED OR SAVED AS A RESULT OF THIS PROJECT

[REDACTED] new jobs created and included in the financial forecast.